

$$F = 100 \text{ N} \rightarrow$$

$$d = 20 \text{ m} \rightarrow$$

$$\begin{aligned} \text{WORK} &= F \parallel d \\ &= (100 \text{ N})(20 \text{ m}) \\ \text{WORK} &= 2000 \text{ J} \end{aligned}$$

Power (P) = the Amount
of work DONE over a
period of time.

$$P = \frac{\text{WORK}}{\Delta t}$$

$$\Delta \text{time } 1 = 20 \text{ seconds}$$

$$\Delta \text{time } 2 = 10 \text{ seconds}$$

$$\Delta \text{time } 3 = 5 \text{ seconds}$$

TRAIL 1

$$\text{WORK} = 2000 \text{ J}$$

$$\Delta t_1 = 20 \text{ sec}$$

$$P = \frac{\text{WORK}}{\Delta t} = \frac{2000 \text{ J}}{20 \text{ s}} = 100 \text{ Watts}$$

TRAIL 2

$$\text{WORK} = 2000 \text{ J}$$

$$\Delta t_2 = 10 \text{ sec}$$

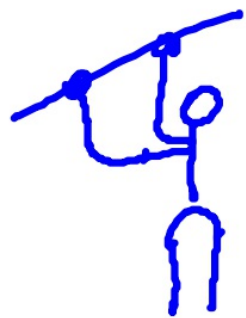
$$P = \frac{\text{WORK}}{\Delta t} = \frac{2000 \text{ J}}{10 \text{ s}} = 200 \text{ WATTS}$$

TRAIL 3

$$\text{WORK} = 2000 \text{ J}$$

$$\Delta t_3 = 5 \text{ sec}$$

$$P = \frac{\text{WORK}}{\Delta t} = \frac{2000 \text{ J}}{5 \text{ s}} = 400 \text{ WATTS}$$



MR. AFF PULL UP

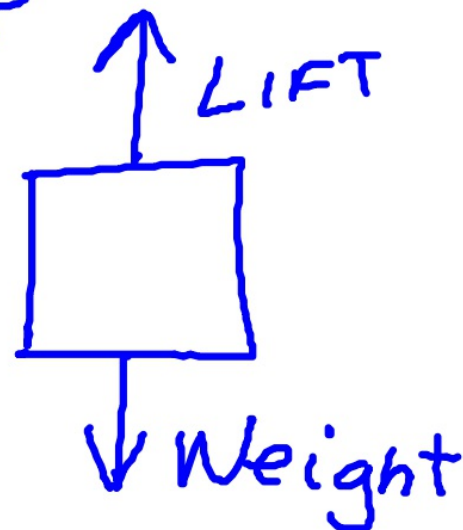
$$m = 95 \text{ kg}$$

$$d = .8 \text{ m} \uparrow$$

$$\Delta t_1 = 1 \text{ s}$$

$$\Delta t_2 = .5 \text{ s}$$

$$\Delta t = .25 \text{ s}$$



$$\begin{aligned} \text{WORK} &= F \cdot d \\ (931 \text{ N}) &(\cdot 8 \text{ m}) \end{aligned}$$

$$\text{WORK} = 744.8 \text{ J}$$

$$\begin{aligned} \text{Weight} &= m \cdot g \\ &= 95 \text{ kg} \times 9.8 \text{ m/s}^2 \\ &= 931 \text{ N} = F = \text{LIFT} \end{aligned}$$

$$\text{Power \#1} = \frac{\text{WORK}}{\Delta t} = \frac{744.8\text{J}}{1\text{s}} = 744.8 \text{ WATTS}$$

$$\text{Power \#2} = \frac{744.8\text{J}}{.5\text{s}} = 1489.6 \text{ WATTS}$$

$$\text{Power \#3} = \frac{744.8\text{J}}{.25\text{s}} = 2979.2 \text{ WATTS}$$

Power Required increases with
Quicker time.